

ESSAY ON
PERSPECTIVE.

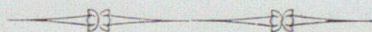
X701.8

10

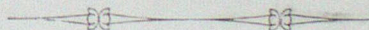
0 TH01- 39H

1A 9142

cb
048433 (6)



Essay
on
Perspective :
etc.



AN ESSAY
ON
PERSPECTIVE:

WITH
Notes
ILLUSTRATIVE OF THE SUBJECT;

AND A FEW
OBSERVATIONS ON SHADOWS,
INTENDED FOR
ARCHITECTURAL STUDENTS AND CIVIL ENGINEERS.

BY
F. B. RIBBANS, F.S.A.,

LATE OF CORPUS CHRISTI COLLEGE, CAMBRIDGE.

London:
R. GROOMBRIDGE, PATERNOSTER ROW.

—
MDCCCXLIII.

ALFRED ALLEN,
PRINTER TO THE QUEEN, BY APPOINTMENT,
COLMORE ROW, BIRMINGHAM.





PROPRIETARY SCHOOL.

EDGBASTON.



TO

MRS. RYALL, ESQ., LL.D.,

FOOTING HILL, DUBLIN.

PROFESSOR OF THE SCIENCE AND INSTRUCTION OF THE PEOPLE.

THIS

Essay on Perspective

IS PRESENTED,

AS

A TRIBUTE TO HIS PUBLIC WORTH,

IN PROMOTING CLASSICAL LITERATURE, POLITE ARTS, AND
GENERAL KNOWLEDGE;

AND AS

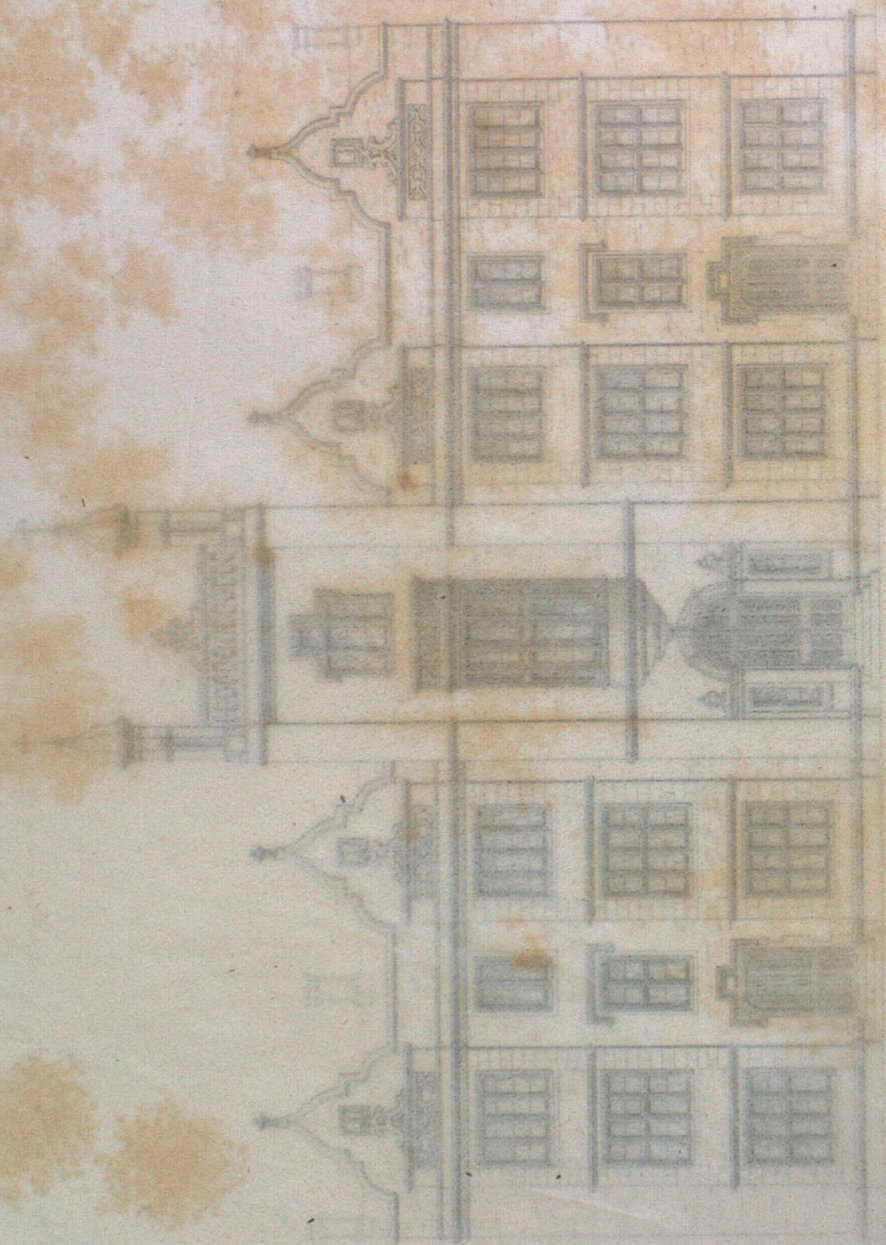
A TESTIMONY OF RESPECTFUL ADMIRATION,

FOR HIS UNFAILING URBANITY IN THE DISCHARGE
OF HIS IMPORTANT AND DIGNIFIED OFFICE,

BY HIS FAITHFUL COLLEAGUE,

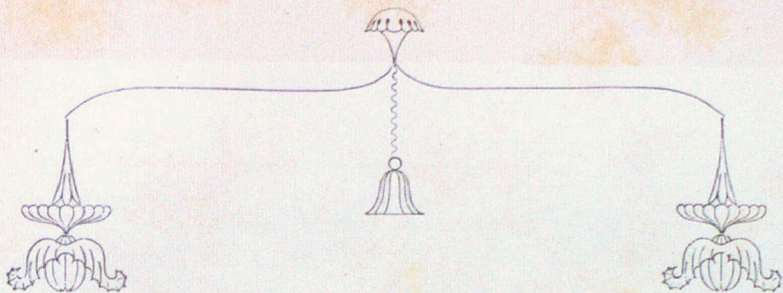
FREDERICK BOLINGBROKE RIBBANS.





THE PRINCIPAL, BOWDOIN

EDGEMOOR



TO

JOHN RYALL, ESQ., LL.D.,

TRINITY COLLEGE, DUBLIN,

PRINCIPAL OF THE BIRMINGHAM AND EDGBASTON PROPRIETARY SCHOOL,

THIS

Essay on Perspective

IS PRESENTED,

AS

A TRIBUTE TO HIS PUBLIC WORTH,

IN PROMOTING CLASSICAL LITERATURE, POLITE ARTS, AND

GENERAL KNOWLEDGE;

AND AS

A TESTIMONY OF RESPECTFUL ADMIRATION,

FOR HIS UNIFORM AND UNFAILING URBANITY IN THE DISCHARGE

OF HIS IMPORTANT AND DIGNIFIED OFFICE,

BY HIS FAITHFUL COLLEAGUE,

FREDERICK BOLINGBROKE RIBBANS.



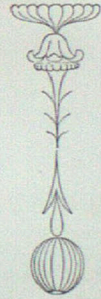


THE Author of the following ESSAY is convinced, from long experience, that the judicious teacher can do more good in a short time with the black-board and oral instruction, than could be accomplished by volumes of long and laboured directions.—Perspective Diagrams may assist, but can never supply the teacher's place. He is of opinion, that plans for self-teaching seldom succeed,—and he therefore abstains from further remark; except, that he ventures to suggest the benefit of drawing in Perspective, in the *first instance*, on a large scale, with great distances; and to recommend the CUBE as the best figure to be practised upon, until the pupil fully understands the delineation of it in any position.





Subscribers.





List of Subscribers.

HIS ROYAL HIGHNESS THE DUKE OF SUSSEX, Kensington Palace.

Albites, A., Esq., A.B., LL.B., Paris.

Allen, Josiah, Esq., Birmingham.

Attwood, Thomas, Esq., Harbourne.

Austin, Richard, Esq., Birmingham.

Bolingbroke, Viscount Henry St. John.

Bolingbroke, Rev. H. S., LL.B., London.

Bailey, Rev. William, M.A., Ultinge Vicarage, Maldon.

Benson, Mrs., Colmore Row, Birmingham.

Burt, Mrs., Hagley Road, Edgbaston.

Barry, Lieutenant-Colonel, R. E., Dublin.

Bache, Rev. S., Edgbaston.

Barker, Edward, Esq., Church Road, Edgbaston.

Barnett, D., Esq., Bennett's Hill, Birmingham.

Birch, C., Esq., Metchley Abbey, Harbourne.

Blakemore, Joseph, Esq., Edgbaston.

Blunt, John V., Esq., Frederick Street, Birmingham.

Bolton, Thomas, Esq., Calthorpe Street, Edgbaston.

Bolus, W., Esq., 3 Cumming Street, Pentonville.

Brierley, J. L., Esq., Dale End, Birmingham.
Bristow, Rev. E., Old Square, Birmingham.
Broomhead, W., Esq., Edgbaston.
Brown, T. B., Esq., Handsworth.
Brutton, T., Esq., Governor of H. M. Castle, Stafford.
Buckle, William, Esq., Rose Hill, Handsworth.
Buckley, S., Esq., Calthorpe Street, Edgbaston.
Busk, Hans, Esq., 1, Figtree Court, Temple, London.
Butterfield, C., Esq., Lambeth Terrace, London.

Colls, Rev. J. F., D.D., Berners Street, London.
Colls, Mrs.
Chesnutt, Rev. G., M.A., Trin. Sq., Newington Butts.
Crow, Rev. F. H., M.A., Alcester.
Clear, Mr. George, jun., Wolverhampton.
Carden, G. C., Esq., Worcester.
Chance, R. L., Esq., Summerfield House, nr. Birmingham.
Chaplin, Mrs. J. C., Hagley Cottage, Edgbaston.
Chinn, R., Esq., Bristol Road, Edgbaston.
Clark, F., Esq., Hazelwood, Edgbaston.
Clark, F., jun., Esq., Ryland Road, Edgbaston.
Cohen, Joseph, Esq., Birmingham.
Collins, J., Esq., Hazelwood, Edgbaston.
Cooper, C., Esq., Hagley Road, Edgbaston.
Cottingham, L. N., Esq., F.S.A., London.
Cox, T. Esq., Ryland Road, Edgbaston. (2 copies)

Dartmouth, the Rt. Hon. the Earl of, Sandwell.
Downes, Rev. J. W., M.A., Birmingham.
Dee, Frederick, Esq., Birmingham.

Dehane, E. F., Esq., Wolverhampton.
Devereux, William, Esq., Bromyard.
Deykin, W., Esq., Highfield, Edgbaston.
Dobie, A., Esq., Lancaster Place, London.

Edge, Charles, Esq., Bennett's Hill, Birmingham.
Edge, Thomas, Esq., Kaye Hill, Birmingham.
Elliott, William, Esq., The Dales, Edgbaston.

Fearnley, Rev. J., M.A., King's College, London.
Furnell, M., Esq., D.L., H. S. of County Limerick,
Cahir Elly Castle.

Fletcher, Bell, Esq., M.D., Newhall Street, Birmingham.
Felton, Mrs., Russell Row, Edgbaston.
Faraday, F. B., Esq., Fenton, Potteries, Staffordshire.
Fereday, T., Esq., Dudley.
Fiddian, T. B., Esq., Wheeley's Road, Edgbaston.
Fowler, William, Esq., Edgbaston.
Freame, Charles, Esq., Worcester.

Grey de Ruthyn, Lady, Harbledown, Canterbury.
Gilpin, Miss, Calthorpe Street, Edgbaston.
Gem, R. W., Esq., Waterloo Street, Birmingham.
Grazebrook, John, Esq., Audnam, Stourbridge.
Griffin, John, Esq., Stafford.
Grindrod, John, Esq., M.D., Liverpool.

Hayes, Mrs. Henry, Passage West, Cork.
Horton, Mrs. H., Bristol Road, Edgbaston.
Harper, C. W., Esq., Wavertree, Liverpool.

- Hardwidge, J., Esq., 1, Portland Place, Camberwell.
Harris, Thomas, Esq., Edgbaston.
Hebbert, John B., Esq., Temple Street, Birmingham.
Hebden, W., Esq., Peel Street, Liverpool.
Herbert, R. C., Esq., Worcester.
Hodgson, J. V., Esq., Edgbaston.
Houghton, D., Esq., The Firs, Edgbaston.
Hughes, Harry, Esq., Nelson Terrace, Bristol Road.
Hunt, Harry, Esq., Edgbaston.
Hyde, J. B., Esq., Britannia Square, Worcester.
- Illingworth, Rev. Edward, M.A., Edgbaston.
Ingram, J. W., Esq., Bradford Street, Birmingham.
- Johnson, Rev. Richard, M.A., Rectory, Lavenham.
Jukes, A., Esq., Newhall Street, Birmingham.
- Kentish, Rev. John, Park Vale, Edgbaston.
Knight, Johns, Esq., 47 Dover St., Piccadilly, London.
- Lawson, G., Esq., Great Charles Street, Birmingham.
Ledsam, Joseph Frederick, Esq., Chad Hill, Edgbaston.
Lingard, George, Esq., Birmingham.
Lloyd, William, Esq., Soho, Handsworth.
Lofty, M., Esq., Portland Place, Camberwell, London.
Louis, H. T., Esq., Birmingham.
- Major, Rev. J. R., D.D., King's College, London.
Macdonald, W., Esq., Bristol Road House, Edgbaston.
Male, G. Edward, Esq., M.D., Birmingham.

- Manning, Wm., Esq., Worcester.
Martineau, Robert, Esq., Edgbaston. (2 copies)
Martin, Robert, Esq., Edgbaston.
Matthews, W., Esq., Calthorpe Street, Edgbaston.
Meacham, Edwin, Esq., Ledbury, Herefordshire.
Miles, William, Esq., Worcester.
Moore, T., Esq., Parkfield House, Edgbaston.
Mumford, John, Esq., Birmingham.
- Noble, Mrs., Francis Street, Edgbaston.
Newman, Major, Erdington.
Newstadt, S. J., Esq., Birmingham.
- Ostler, Mrs., Passage West, Cork.
Ostler, Wm., Esq., Passage West, Cork.
Oldnall, George, Esq., Worcester.
- Palmer, Rev. F., LL.B., Rectory, Alcester.
Perry, Mrs., Edgbaston.
Pargeter, Mrs., Delph House, near Stourbridge.
Partridge, W. H., Esq., Birmingham.
Parsons, W., Esq., Halford Street, Leicester.
Payn, John Brearley, Esq., Birmingham.
Penrice, Edward, Esq., Droitwich.
Perrins, Charles, Esq., Russell Row, Edgbaston.
Peyton, R., Esq., Church Road, Edgbaston.
Pilkington, W., Esq., Millbrook, St. Helen's. (2 copies)
Puget, L. Albert du, Esq., 11 Peel St., Park, Liverpool.
- Roberts, Rev. Thomas, M.A., Alcester.

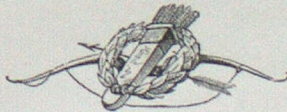
- Rickman, Mrs., 17 Albion Street, Birmingham.
Ryall, Mrs., Holly Cottage, Edgbaston.
Ryall, Isaac, Esq.
Ryall, John, Esq., LL.D.
Raphall, Rev. Dr., Bristol Road, Edgbaston.
Ratcliff, J., Esq., Hagley Road, Edgbaston. (2 copies)
Ratcliff, C., Esq. (2 copies)
Ratcliff, Joseph, Esq., Monument Lane, Edgbaston.
Ratcliff, Edmund, Esq., Calthorpe Street, Edgbaston.
Rawlins, Thomas L., Esq., Parade, Birmingham.
Reece, W. H., Esq., New Street, Birmingham.
Room, Francis, Esq.
Roberts, W., Esq., Hagley Road, Edgbaston.
- Sandon, Right Hon. Viscount, Grosvenor Sq., London.
Scholefield, Joshua, Esq., M.P., The Grove, Edgbaston.
Scott, Robert, Esq., M.P., Stourbridge.
Spooner, Rev. I., M.A., Edgbaston.
Smout, Mrs., Bull Street, Birmingham.
Sanders, Thomas, Esq., Bromsgrove.
Scholefield, Wm., Esq., George Street, Edgbaston.
Shakespeare, Samuel, Esq., Birmingham Heath.
Shaw, James, Esq., Hampstead, London.
Sheridan, J. H., Esq., Longton, Staffordshire Potteries.
Shirley, E. J., Esq., Ealington Park, Shipston-on-Stour.
Simpson, M. H., Esq., Bristol Road, Edgbaston.
Small, Thomas, Esq., Westbourne Road, Edgbaston.
Stirrop, Jukes, Esq., Stafford.
Strong, Frederick, Esq., Hammersmith.

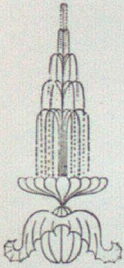
Taylor, Mrs., Hagley Road, Edgbaston.
Tabberner, J. L., Esq., Birmingham.
Tarleton, Francis W., Esq., Birmingham. (2 copies)
Taylor, W. H., Esq., Soho, Handsworth.
Thompson, W., Esq., Bristol Road, Edgbaston.
Thornton, Samuel, Esq., Camphill, Birmingham.
Thorneycroft, Edward B., Esq., Wolverhampton.

Udall, John, Esq., Winchmore Hill, London.

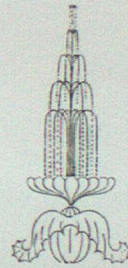
White, W. H., Esq., Artillery Place, London.
Wall, W., Esq., Mortimer, Berks.
Westcott, Frederick, Esq., Spring Street, Edgbaston.
Whitehouse, W. D., Esq., Studley, Warwickshire.
Wilson, R. L., Esq., Milk Street, Cheapside, London.

Yates, Mrs. R., Toxteth Park, Liverpool.

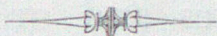




Essay.



Essay on Perspective.



ANY one who possesses any of the better feelings of humanity, must conceive some degree of attachment for that with which he has long and constantly associated. We become partial to a tree, a house, a garden, or a landscape, when from seeing them frequently they have become familiar to our eye. From gratifying the eye in the first place, they next please the mind, and finally succeed in captivating the heart ; and our liking for these inanimate objects is increased in degree, and protracted in duration, if we have planted the tree, built the house,

laid down the garden, or contributed by the formation of fish-ponds and fountains, of groves and grottoes, to the variety of the admired scenery, and the beauty of the favourite spot. Still stronger and more lasting is our just regard for the horse that has patiently served us, and the dog that has faithfully guarded our property. But still farther improved and enlarged, confirmed and rivetted, certainly beyond description, and perhaps beyond conception, is the adamantine bond that links us to our fellows in the several links of society, and the numerous relations of life. For neither our liking for any of the parts of inanimate nature or of lifeless art, nor our preference for any of the inferior and irrational members of the animal kingdom, can bear the slightest comparison, or stand for one moment in

competition with the ardour, the intensity, and the steadiness of friendship founded on esteem, and established by mutual acts of obligation, of parental, filial, fraternal, or conjugal affection ; of all these again, the fondness of the parent for his offspring is the deepest and most enduring. Others may be more vivid and more violent at certain periods of their prevalence,---but this alone, undamped by disappointment, and unextinguished by ingratitude, burns brightly and beautifully to the end of life ; neither dimmed nor consumed, till the soul that it has influenced and filled returns through the regions of death to the consoling presence of the Divine Being, who is at once the unsullied source, and the purest example of parental love. Many circumstances concur to render this the most

fixed, the most unalterable principle of human love. It is a natural instinct, an early habit, an unalienable claim. But it were idle to argue about it---it were useless to multiply proofs ; nature proclaims loudly within the breast of every parent that such is its immortal quality ; and universal experience from without confirms the decision. There is yet another connection that cannot be referred to any of these, and which possesses much of the fire of the other classes of relationship, while it participates largely in the steadiness of paternal regard ; resembling, however, the latter much more minutely than any of the former, in its origin, its existence, and its end.

And this is, the tie that unites a tutor to his pupils---and the glow of feeling impelled and guided, stimulated and

sanctioned, by a principle of duty, that induces, nay urges, for the benefit of the latter, the former to think without ceasing and to labour without fatigue, to devote his whole time to their interest, and all his powers to their improvement ---to make their advancement his only study, and their welfare his sole delight. They who think not upon this subject to the full as warmly as I have endeavoured to express myself, may be men of shining talents, and of extensive learning,---or of both: and yet I hesitate not to affirm, that---if they come to the inspiring task of moulding the youthful mind to usefulness and good, with cold formality and frigid indifference, and not with burning zeal, and bright enthusiasm---however highly they may have been gifted by heaven, and however the value of that celestial bounty

may have been enhanced by their own laudable exertions, when they turn tutors they mistake their calling, for nature never designed them for the important occupation in which they thoughtlessly and unfortunately engaged.

Having myself devoted all my life, since I have had any controul over my own actions, to the tuition of youth, I find in my own heart a full confirmation of this theory ; and, to myself at least, an incontrovertible proof of its conformity with truth and reason. Parents are indeed the persons whom nature seems to point out as most proper to watch over, to direct, and regulate the education of their offspring ; but in the present constitution of society, we seldom see a parent possessed at once of opportunity and ability for performing the pleasing task ; the office is therefore

entrusted to another ; and cold and callous must that other be, if he cherish not a deep and lively sense of so honourable a confidence, and so awful a responsibility.

That such a feeling universally prevails, is proved by the numerous works which every day issue from the press, and emanate from the busy pens, the intelligent heads, and the affectionate hearts of the friends of youth---the benefactors of the rising generation. Indeed, so much has been done and is constantly being accomplished in this way, that scarce an opening is now left for any one, equally well inclined with his predecessors, to give vent to his feelings and to evince his zeal, by writing on any branch of useful or ornamental education, that has not been ably and extensively discussed. Yet one small

opening, as it appears to me, does remain; and of that I avail myself.

That PERSPECTIVE as a science was but little, if at all, known to the antients appears, both from the imperfection or the absence of its practice in their works that have descended to our time, and from the silence of all their writers, with whom we are acquainted, respecting it. The paintings that have been discovered amid the buried treasures of Herculaneum, are lamentably deficient in the charm of Perspective, and altogether unworthy of the extravagant praise that has been lavished upon them. The antients excelled in the delineation of single figures, but almost invariably failed in combination and grouping. No author of an earlier date than Vitruvius makes any mention of Perspective, and he only alludes incidentally to

some trivial essays, which, probably from their want of merit, survived not to enlighten or amuse posterity. The deluge of barbarism that destroyed the Roman Empire, swept away, in its irresistible progress, all relish for refinement and all regard for the fine arts; and in the ferocious state of society that succeeded ---nothing being either esteemed or encouraged except bodily strength and military skill---the politer pursuits and more gentle accomplishments languished in neglect, and perished for want of cultivation. It was not till the beginning of the thirteenth century that Painting and her sister arts emerged from the profound depths of mental darkness in which they had so long lain, overpowered and oppressed. But even when Painting, Sculpture, and Architecture, rose from the gloomy dungeon in which they

had been so long imprisoned, and struggled into light, Perspective appeared not with them ; nor was it till long afterwards, that she was hailed and acknowledged as an efficient ally and indispensable help to the perfection of pictorial representation. From this time to the end of the fourteenth and commencement of the fifteenth centuries, the merit of the painting was considered to consist in the closeness of the imitation ; and, in conformity with this opinion, the aspiring artist of that era pourtrayed, with painful accuracy, every hair on the head, and every freckle, and every spot, and every mole, that he observed on the human face from which he happened to copy. With the same careful minuteness did he depict the fibres in the leaf of a plant, and the knots on the trunk of a tree, forgetting, or not reflecting,

that when the natural objects are offered to our vision at a certain distance, all asperities disappear, and the eye no longer distinctly perceives or nicely discriminates those slight and slender marks, that are sufficiently obvious on a close inspection ; and that, therefore, however exact the copy might have been, its effect was not the same that the original object would have produced, if seen at the supposed distance.¹ From this period the value of Perspective began to be appreciated as it deserves, though some time elapsed before it was understood to the extent and with the precision that its importance demands. Its exercise was, at this season, rather the result of experimental judgment and natural taste, than guided and restricted by permanent rules and mathematical accuracy. But towards the close

of the fifteenth, and the opening of the sixteenth century, when Albert Durer, Leonardo da Vinci, Parmegiano, Julio Romano, Paulo Veronese, Michael Angelo, Rubens, Raffaele, and Titian, threw over that age the splendour of their shining talents, and gave dignity to the profession, and infused excellence into the art of Painting,---then Perspective became a science carefully studied and well understood; the principles of which, so essential to the artist and so advantageous to every person, were eventually, by Brook Taylor in his admirable treatise, collected in a lucid form and fixed on a solid foundation. Since then, numerous works on the subject have been sent into the world by those who were well qualified to perpetuate its use and explain its nature. I purpose, in this Essay, to endeavour to prove, that a

knowledge of the science of Perspective is indispensable to an artist, an engineer, and a machinist, and would be useful to every respectable member of society.

The object of a painter is to present, on a plane surface,² an imitation of some group of objects or portion of landscape, in the same form in which they appear to the eye, or, at least, so as to produce the same effect that they have upon the vision when seen, as they are in nature, with all their various projections and different distances. An exact mathematical copy of these objects will not produce the desired effect, because the eye itself sees not these objects as they really exist. Of this fact a person ignorant of the principles of Perspective is not at once aware, because the judgment, from previous knowledge of the actual shape and situation, corrects what we may call, for

want of a better expression, the erroneous representation of the eye.³

Like perspectives, which rightly gazed upon
Shew nothing but confusion, eyed awry
Distinguish form.

SHAKSPEARE.

This, to many persons who have never thought upon this topic nor investigated this optical delusion, may appear a paradox,---and these persons may be inclined, without ample conviction to the contrary, to censure the assertion as absurd, and stigmatize it as untrue ;---but we have for them an illustration that is accessible and must be comprehensible to every one. Whoever looks through it, from one end to the other, of a long street, which he knows to be composed of houses precisely similar in shape and size, will see that street growing gradually narrower as he directs his eye to

a more distant point, till, if the distance be sufficient to produce the deception, the houses at their remote extremity will appear to approach each other, and finally to meet.⁴ It is, besides, well known---or, at least, it must have been observed by those who think as well as look, and use their understanding as well as their eyes---that all objects appear smaller in proportion as they are viewed from a greater distance, while they are, at the same time, so softened down and blended together, that their projections vanish, and their angles cease to be observable.

As far, therefore, as the professional painter is concerned, it needs no laboured argument nor long discussion to prove, that it is to him important, nay indispensable, to make himself master of the science of Perspective, which will enable

him accurately and at once, faithfully and without fear of failure, to transfer to his canvass, not a mathematical copy of that which he wishes to pourtray, but a skilful representative of the original, such as it would appear to the eye, if subjected to its inspection at the given distance from a specified spot. He who produces a mere servile imitation of single objects, and paints most correctly a fly upon a flower supposed to be seen from a distance whence the human vision could not possibly discern it, may gratify the ignorant and please the unreflecting, but his minuteness must be condemned by all of sound judgment and chastened taste, as unnatural and exaggerated.--- We conclude, therefore, that to the painter who looks to his cotemporaries for applause and profit, and to posterity for fame and immortality, a thorough

knowledge of the science of Perspective is absolutely indispensable.

It is no less necessary that the architect should be well versed in this science, and should invariably refer to its unerring laws all his plans and models, edifices and erections, as the source of beauty and the test of correctness.⁵ For want of attention to the important rules of proportion, the ornaments and figures in the two Cathedrals of St. Peter's at Rome, and St. Paul's in London (which was modelled after the former), being too large for the respective dimensions of these buildings, cause them to appear smaller than they really are, and thus deduct from the grandeur and diminish the effect. And surely this material error and lamentable defect, in these two otherwise splendid edifices, springing from such a cause, suf-

ficiently establish our last position, and render farther illustration unnecessary and any additional remark superfluous.

Although, to the sculptor, a knowledge of the science of Perspective may not be absolutely necessary to produce accurate proportion and graceful form in single figures, yet, when he undertakes to group them in relief, it becomes no less essential to him than it is to the painter or architect, and for the same reasons.

To prove more clearly that a knowledge of the science of Perspective would be useful to all the respectable members of society, I shall divide them into two classes,---those who are possessed of independent fortunes, and those who are obliged to obtain their livelihood by the industrious exercise and laudable exertion of their respective faculties.

No man is authorised to doze away his days in doing nothing. It is culpable, under any circumstances, to lead a life of entire idleness and listless ease. The man of independent fortune is bound to adopt some honourable employment suitable to his taste, acquirement, and ability---and happy is it for him that he has the opportunity of making his own selection. After, however, the duties of the occupation that he has chosen are faithfully performed, he will need amusement, and has a claim to relaxation. After, for instance, he has studied to qualify himself for the service of his country as a senator,---after he has assiduously and actively pointed out abuses in her constitution, and suggested remedies or proposed improvements for her better regulation and sounder government,---

after he has zealously and ably supported those that are good amongst existing usages, and defended them from the attack of the restless and the aspersions of the insincere,---or after, with humbler and less aspiring ambition, he has honestly and indefatigably interested himself in the concerns and toiled for the welfare and tranquillity, for the prosperity and comfort, of his immediate neighbourhood,---even after this, his mind must still be relieved, and he will still find leisure for some lighter occupation, which he may court as a solace and fly to as a pastime. How desirable is it, then, that instead of being the slave of sensual indulgence and the victim of degrading vices, he should become a rational lover, a discreet judge, and a liberal patron, of what are justly denominated the Fine Arts.

But, without a competent knowledge of the science of Perspective, this delightful result is morally impossible. If he should choose to wing the heavy hours, and to seek amusement by wielding himself the pencil and the brush, he would wish to attain, even in that which constitutes his pastime, the highest point of excellence of which it admits,---he would, doubtless, desire to excel in all that he undertakes. But I have before shown, that eminence in Painting is not to be achieved without a knowledge of the science of Perspective.

The amateur, it is true, will, in all probability, never soar to the same height in the firmament of pictorial fame as the professional artist occasionally reaches, because the latter devotes to the one undivided object all his time and toil---his study and solicitude

---his imagination and energy ; while the former is compelled by duty, if not led by inclination, to divide his attention between a variety of objects, and to dedicate his powers to a variety of pursuits, more important to society, and therefore more pleasing to a well-constituted mind. But the continued effort must, notwithstanding, prove advantageous to himself, and therefore, as far as it is effected by his example, beneficial to society,---because it draws him away from low and base propensities, supplies him with a perennial source of elegant and innocent recreation, and inspires him with a rooted disgust for all that is mean, profligate, and inglorious,---and fills him with an unextinguishable desire for all that is noble, generous, and dignified. This is surely no forced and far-fetched deduction---this is no unreasonable calcu-

lation; and for this happy disposition, the individual that enjoys it, and the society that he adorns and improves, may be frequently indebted to the early study of the science of Perspective,---for this may strike forth into light and loveliness the latent spark of refined taste and pictorial talent, which would otherwise have remained for ever cold and dormant in its dark and unsuspected repository. But we will even suppose it unlikely that a person of rank and affluence, or of easy and independent fortune, should often strive to produce pictures himself---though it certainly may and does sometimes happen,⁶---and still we can show a knowledge of the science of Perspective to be useful to this class of society from another cause.

There are very few, if any, endowed with rank and refinement, who, if they

are careless about becoming artists themselves, do not feel a strong desire and an emulous wish to collect and to possess the most prized and perfect productions of the most sublime and celebrated masters ; and the arguments that we have adduced in favour of encouraging in the aristocracy the practice of painting, apply here with undiminished force ; although, in my poor opinion, the views of the mere collector are by no means so elevated and so splendid as those of him whose ambition it is himself to excel in the art that he admires, and ought, therefore, to uphold. The pleasure, however, even of collecting must be vastly enhanced, when the collector depends for his selection upon his own judgment : how much less liable to error and imposition must that judgment be, when it is not

only guided by natural taste, but also defended by acquired skill. How much better it is that he who enjoys ample means for the gratification of so elegant a propensity, should not be misled by the interested eulogy of a dealer, the false assumption of a popular name, the exorbitant value occasionally attached to the inferior production of an artist who has been generally successful and frequently great, or the unmerited *eclat* that is often showered upon a picture, which has no claim to estimation except that it once formed a part---small as unity---of the well-known gallery of some wealthy and distinguished individual. How much better it is---how much more safe and more reputable---that such a one should be able to decide for himself, upon the relative worth and real excellence of whatever production is submitted to his

inspection and solicits his purchase.---
By means of this enviable power of discernment, he will procure for himself a more perfect, and therefore a more valuable collection, at a lower price ; and will, by thus laudably and sensibly economizing his property, and laying it out with judgment and discretion, have at his command a larger surplus to expend in generous acts of private benevolence and public bounty. But, without a knowledge of the science of Perspective, he cannot, if he be a collector, save in this item of expenditure. And therefore, I am authorised to conclude and to aver, that to him, and to all who hold the same rank and move in the same station with himself, this knowledge will be---speaking of it in terms most measured and most moderate---highly beneficial and eminently useful.

We shall now proceed to prove---and it can be done with brief facility---that a knowledge of the science of Perspective will be, at least, equally useful to those who are obliged to obtain a livelihood by the industrious exercise and laudable exertion of their respective faculties. Many of the most active and most intelligent members of our second division are in the receipt of such immense incomes, and in the habit of constantly accumulating such ample---such almost unlimited fortunes, that the arguments which I have advanced, while reasoning about the former class, are no less applicable to the latter, except that they have not so much time as the former to set apart for mere amusement, or to devote to the investigation and encouragement of the Fine Arts. Yet they, too, after the utmost application to business

that human strength can accomplish or human nature sustain, must occasionally relax,---or run the risk, and even invite the approach, of mental debility and bodily disease. Amusement is, as I have before observed, the privilege of him who has purchased it by honest toil,---and he alone knows its true value and is acquainted with its real enjoyment; but as that enjoyment is infinitely increased by the consciousness of him who participates in it, that it is, at all events, innocent, and if possible useful, ---the selection of our pleasures is by no means a matter of so little importance, as many, who only cast a careless glance on the surface of things, may at first sight be inclined to admit. How ill-judged, then, is it of the man whose industry entitles and whose wealth enables him to make almost any selection within

the wide range of nature and of art, not to fix upon some pastime, which is at once prudent, profitable, and pleasant. That a love of the Fine Arts is pleasant, all persons of taste and refinement will easily imagine and readily allow. I will venture to affirm that it is also prudent and profitable, because it improves and expands the mind, and saves its opulent professor from indulging in expensive vices and contracting pernicious and destructive habits. It is advisable, therefore, that he who is wealthy should make the pursuit his pastime, in preference to most others ; but it is equally advisable that he should qualify himself for its full enjoyment, by obtaining a knowledge, without which it can be only a sickly pretence of pleasure and a paltry affectation of taste.⁷ This can only be accomplished by acquiring a knowledge of

the science of Perspective,---and therefore this knowledge will be most useful to all who are thus situated : “ Where perseverance is the motto, success will be the crest.”

To those who are inferior to the last-mentioned class in point of property, but their equals in taste and intelligence, the same remarks will still apply, ---because, those who cannot afford to accumulate the splendid paintings that adorn our royal palaces and decorate the mansions of our nobility, may gratify themselves with the possession of cabinet pictures ; and those whose more slender incomes render this expenditure imprudent, may yet derive exquisite satisfaction from the acquisition and inspection of superior prints. And here I would suggest that the best of engravings should always be placed before children,

so as to mould their minds and to form their taste for the Fine Arts.

Thus, from a participation in the pleasure ministered by the Fine Arts, no one of anything like easy circumstances is entirely excluded. But as the pleasure cannot be relished, with all the delight that it is capable of conferring, by those who are altogether ignorant of the science of Perspective,---to all that compose the numerous class which has been considered last, a knowledge of the science will be most useful.

But it is not alone as a help to our enjoyment and a hand-maid to our pastime that this science is useful. It is as a minister to the daily comforts and conveniences of life---as the fosterer of invention and the promoter of mechanical improvements---that this science not only claims our attention, but com-

mands our respect. No one could possibly, if quite unacquainted with this science, convey to a workman, or to any one else, either by pen or pencil, or by any other graphic apparatus, an accurate and satisfactory idea of the shape and formation of any instrument or machine, which he had mentally invented and wished to have mechanically constructed ; because, as I before stated, no object offers itself to the eye in the form that it is known to possess, with the single and solitary exception of a sphere, whose contour is every where bounded by a circular line.⁸ Even a circle, strange as it may seem, presents not to the eye the figure of a circle, except when the eye is horizontal to the centre of its plane ; when viewed from any other point, it appears an ellipsis or oval, contracted or distended according

to the elevation of the eye. To determine the true image of an object, it is often necessary to know in what direction the light proceeds or falls upon it. If a hemisphere were placed with its flat side against a wall, and viewed at a distance, it would be doubtful whether it were concave or convex, or even whether it were not a plane, if it could not be discovered, by the neighbouring objects, which way the light proceeds which impinges on it. Hence, it is evident, that the size and distance, and true figure of objects, may, in many cases, be very uncertainly distinguished.

It has been calculated, that objects are visible at the distance of three thousand four hundred and thirty-six times their diameter, if viewed by eyes perfectly organized, and through the medium of common daylight, equally diffused from

the organ to the object ; but, in proportion as the comparative degree of light is greater upon the object than upon the eye, this power of seeing it at a distance will be extended, and in proportion as it is less, it will be shortened. Although the eye moves with great celerity, it can only see one object at a time. For instance, at a single glance we perceive that a theatre contains a great many persons ; but we cannot, at the same moment, distinguish one face from another.

That we could gain little knowledge, either of the distance, the magnitude, or the figure of things, by the sense of sight alone is sufficiently evident, for it is only by a comparison of different objects presented in the same picture that the mind can determine on the proportions of each. When the means

of comparison are deficient, our judgment of the size, form, or distance of the object, becomes ambiguous,---as in looking at an object a long way off, over a level tract of land or (particularly) water, for instance, where there is no variety of intervening objects, the inexperienced observer will form a most erroneous idea both of distance and magnitude.

This deception is nowhere greater than on looking to the heavens, where---for want of intermediate objects by which to judge of the distance---the sun, the moon, and stars, appear much nearer, both to us and to each other; and also they look infinitely smaller than they are known to be. Hence it is, that when the sun and moon are near the horizon, they appear considerably larger than when they are at the meridian,

although their distance from us and their actual diameter are the same.

The scenery and side-wings on the stage of a theatre seem very badly arranged when we view them from one side; but they appear natural enough, when we place ourselves opposite the painter's point in the lowest front box, which is so constructed that the eye is on an exact level with the horizontal line of the scenes, and at the very point of distance the artist drew them, or should have drawn them by,---for the stage of a well-constructed theatre has an inclination towards the horizontal line, governed by the distance of an eye in the centre of the lowest front box, where the stage effect is always the greatest.⁹

Without a competent knowledge of the science of Perspective, a man's in-

ventive faculties become of no avail. He cannot make himself understood, and therefore he is compelled to continue silent. However clever may be his conceptions, for want of this knowledge he is forced to keep them to himself. However splendid may be his inventions, in mental embryo they must perish abortively,---they can never come into actual use; and thus, from not knowing how to make himself intelligible to those whose practical co-operation is indispensable to the solid and efficient completion of his ideal plans---which may, too, be most excellent---they must remain for ever (unless they occur to some one who has more power to produce them) a useless vision, and an unsubstantial dream. If the invention was intended for the increase of his own personal comfort, he must be contented

to dispense with its benefit. If it was calculated to promote some purpose of laudable economy, he must be satisfied still to submit to an expenditure which he feels to be unnecessary, and which he knows might be avoided. If his views were still farther enlarged and extended, and if he contemplated to bestow a benefit on society and a blessing on mankind, his sacrifice in honour and emolument is still more deplorable. In proportion as he feels---or, indeed, is certain---that his plan, if brought to maturity, would be productive of good, he must regret that he is precluded by his want of knowledge, from the pleasure and the privilege of benefitting his fellow men. Besides, improvements may occur to a man who---knowing his inability to make them intelligible to others, and his incapacity to bring, by his own un-

assisted efforts, his first crude thoughts to ultimate perfection---smothers in despair the inventive faculty, which, if properly cherished and prudently cultivated, might have proved a source of fame and happiness to himself, and of emolument and advantage to future generations. Surely, then---since ignorance of the science of Perspective renders a man incapable of ministering as much as he might, if he were acquainted with it, to his own comfort and advancement, to the good of society, and the welfare of mankind---it will not be denied, that I have abundantly proved, as I at first proposed, that a knowledge of the science of Perspective will be useful to every respectable member of society.

It is, I am aware, objected by those who oppose the study and deny the

utility of Perspective, that it fetters the flight of genius and clips the wings of imagination ; and that a great mind may, without its aid, give motion to a master-hand, and produce in painting, sculpture, and architecture, more splendid specimens and more sublime conceptions, than if their bold touches and wild irregularities had been confined by science and controlled by rules. We can hardly compose the mind to so gentle a sensation as pity for one who disavows the necessity of this science, by declaring that “genius, having wings,” can assume any region, passing over all boundaries, and ascending all heights without the mechanical assistance of “keys and ladders.” To these men we answer, that this fatal fallacy has been long since amply exposed and ably refuted by the great Reynolds, who knew well,

from his own personal experience, how much more amazing are the efforts and how much more unbounded is the power of genius, when encouraged---yet corrected, assisted, yet chastened---by the presence and instruction of enlightened science. He knew that---weakened by separation---they become irresistible in their union ; and therefore, he pronounced that “ Rules are not the fetters of genius, but fetters only to those who have no genius,” ---and that “ Excellence is never granted to man, but as the reward of labour.”

Ignorance of Perspective has led the mightiest minds and most exalted talents into the commission of such striking incongruities, as cause us---while we admire the sublime productions of their natural genius---deeply to lament, when the enthusiasm of a first impression has some-

what subsided, that their ignorance of Perspective should throw an air of ridicule round a picture, that ought otherwise almost to be adored. For instance, in historical composition---and that, too, of the highest order---painters, to avoid exposing the ignorance of which they are conscious to themselves, make a back-ground of clouds and sky, or introduce an enormous curtain, where such accompaniments are entirely misplaced and altogether out of character ;---and sometimes propriety is outraged and the illusion almost destroyed, or at least greatly weakened, by representing in a garden a scene that is well known to have taken place in a room, in order to avoid the difficulties that result from a deplorable ignorance of Architecture and Perspective. And if this ignorance be thus detrimental to

men of undoubted genius, how ruinous must it be to those of inferior capacity and more limited abilities.

Some persons set up Colouring in opposition to Perspective, and while they disparage the latter, give to the former an undue ascendancy. The truth is, both are necessary for to render the colouring of a picture highly effective: the outlines of all the objects that compose it must be correctly drawn and their position properly regulated. As an illustration---and, indeed, as a proof of the inadequacy of the finest Colouring to produce a full effect, without the aid of Perspective---I beg to refer the reader to the beauty of single specimens, produced by the Chinese upon rice paper. In closeness of imitation and brilliancy of colouring, they have never been surpassed, and scarcely

ever, if at all, equalled. But when they attempt anything, however trivial, where the slightest knowledge of the science of Perspective is required, their total failure is as manifest as it is lamentable. And therefore, the Chinese, great as they are in the art of copying and colouring in the nicest possible manner upon the most delicate substances, are utterly unable to produce the finest and the most intellectual effect of the genius of Painting,---which is, to present to the eye a living group, and, at the same time, to convey to the mind a stirring story or a moving tale.

I have now described the feelings that led me to contemplate this Essay on Perspective, and the motives that induced me to undertake it. I have given a succinct account of the first introduction of this useful science, and a short

detail of its subsequent progress. I have endeavoured to prove---and I trust not without some success---that a knowledge of this science is indispensable to every one who devotes himself to the study of Painting, Sculpture, or Architecture; and also, that it would be useful, if not more, to every respectable member of society. The interesting nature of my subject draws me imperceptibly into discussion; and it is somewhat encouraging to know that there never was an apostate to the science of Perspective; and those only are on the negative side who have not discovered its beauty.

If I shall be so fortunate as to convince one dispassionate person, or to convert one opponent, to the utility and importance of Perspective, he will pardon my prolixity, and I shall by no means regret my labour, or consider

that my time has been unprofitably appropriated. If I have detained the reader too long, I shall be careful not to aggravate my offence by the length of my apology ; and, anxious to atone for my trespass by a speedy conclusion, I shall only suggest, that youth is the best, though not the only season for the study of Perspective ; and close with an assurance to all who may honour it with a perusal,---that, if the utility of my Essay be at all proportioned to my wish to do good, I shall be abundantly recompensed for the pains that I have expended upon it.





Notes.





Notes.

Note 1, page 11.

Objects may be placed too near the eye for a pleasing or satisfactory observance of them. A faithful representative of a plan should comprise no greater extent than the eye can agreeably embrace at one view, or that can be pleasingly viewed from one point alone.

Those who desire to sketch with facility, should always carry with them a sketch-book, and collect whatever appears picturesque. The outlines or boundaries of objects should at first be carefully and correctly, though faintly, delineated,—for without a good outline it is impossible to produce a clear idea of the object to be represented.

Note 2, page 13.

There are five different planes in Perspective, viz.:—

The PERSPECTIVE PLANE, usually perpendicular to the horizon, and placed between the spectator's eye and the object he views, through which the optic rays emitted from the several points of the object are supposed to pass to the eye, and, in their passage, to leave

marks that represent them on the said plane. Some call this the plane of the picture, because the draught or Perspective of the object is supposed to be upon it.

The GEOMETRICAL PLANE is a plane parallel to the horizon, upon which the object is supposed to be placed that is to be drawn.

The HORIZONTAL PLANE is a plane passing through the spectator's eye, parallel to the horizon.

The VERTICAL PLANE is a plane passing through the spectator's eye, perpendicular to the geometrical plane, and usually at right angles to the Perspective plane.

The OBJECTIVE PLANE is any plane situated in the horizontal planes, of which the representative in Perspective is required.

Of course, all geometrical figures should be understood previous to learning Perspective.

Note 3, page 14.

When viewing a cubical object, so as to see any part of two sides, *both* will appear in Perspective.—To represent, therefore, one side only in Perspective, the other horizontal, is not correct. The proper degrees of light and shade, also, on the different sides of the object, must be duly considered, to give the proper relief to each side; for all parallel perpendicular surfaces will have the like degrees of shade, if equally distant from the eye,—if the distances are unequal, they will become fainter as they recede. All horizontal surfaces will be the same, if they are not so near the ground as to receive a reflection from it, or so high as to be enveloped in the haze of the at-

mosphere.—If an object on a floor within a room be exposed to two lights at unequal distances, there will be two shadows from the object, of different degrees of intensity. The shadow occasioned by the nearer light will be the darker. Shadows occasioned by the sun have defined edges, but shadows within a room will be penumbra.

We frequently see the greatest absurdities committed in Parallel Perspective drawing. A square building, for instance, is sometimes represented with the front parallel to the plane of delineation, and the side vanishing into the horizon; and sometimes the vanishing point is at or near the edge of the drawing.

Note 4, page 15.

In Parallel Perspective, if the point of sight were taken in the *middle* of a street, and the houses on each side were uniform, the one side would just reflect the other, and be unpicturesque.

Long parallel lines always appear grand, in comparison to short ones. The old masters preferred Parallel to Angular Perspective, and not from a want of knowing the Angular, as some have supposed.—(See Poussin's prints—where he has used both, but has given the preference to the Parallel.) *

* The young student would find it advantageous to consult good prints of the *best* old masters. He should likewise *search* for excellencies in the paintings which he sees, and not for defects. We are too apt to indulge in severe criticisms on the errors of others; forgetting that the safest way to eminence is to possess a mind alive to the impressions of beauty,—and that it is nothing less than dishonesty to raise our reputation on the ruin of another's fame.

Bird's-eye-view drawings are by far the more picturesque when taken in Oblique Perspective. The chief pleasure such drawings give is information: they convey a tolerably correct idea of plan and elevation in one piece, and are adapted to explain the portions of fleets or armies. Palaces and other great public buildings, railways, bridges, rivers, and canals, are frequently represented in Bird's-eye Perspective.

Since floors of rooms are level, the horizontal line should never be higher than five and a half or six feet. In churches or theatres, the view may be taken from the gallery. It does not follow that a person must stand on level ground to view an object in perspective. Few rooms will admit of a sufficient distance for the artist to take his view, without making his drawing very distorted: it will, therefore, be better to make the drawing from measures taken from the object, supposing the wall behind us—or the end of the room—removed away.

Views taken from an eminence must have a high horizon: if an eminence be the object of your picture, the horizontal line must be low. All public statues and whole-length portraits must have low horizons; but, whether by sea or land—whether on a hill, a ship's top-mast, or a tower, the horizontal line will be exactly the height of the eye.*

There can be but one horizon in the same picture.

* GASPER POUSSIN frequently placed his horizon about one-third from the top of the picture, which inclined it to a bird's-eye view, where the land appears much larger in space than the sky. CLAUDE LORRAINE has generally made his horizon one-third of the picture



Engraved by S. Flaher

Bridge of St. Clouds.
From Savoy.

Drawn by J. M. W. Turner, R. A.

Book 4, page 11.

...of designs for villas are
...if we have only the model, we
...and a skilful architect
...to the characteristic features of the
...for it is evident that a house, built
...and on a particular part of the
...a very mean appearance,—yet, if built
...and erected on another part of
...convey an idea of extent and magni-
...architecture is intended to be the
...it ought to occupy the greater part
...The Romans were very particular in
...of their buildings. Vitruvius says,
...and both should look to the
...the afternoon light is
...should look to
...the morning light is required—
...the library may not
...to the south and west
...which
...The spring
...for the windows
...westward,
...at the time they are
...The contract should look to the north,
...when used in se-
...also,

...fixes his
...view of the Bridge



Engraved by S. H. H.

Engraving of the
factory of the
S. H. H.

Engraving by S. H. H.

Note 5, page 17.

Perspective drawings of designs for villas are better than a model; for, if we have only the model, we lose the surrounding *scenery*,—and a skilful architect will strictly adhere to the characteristic features of the country around;—for it is evident that a house, built of a particular form, and on a particular part of the lawn, may have a very mean appearance,—yet, if built on another principle, and erected on another part of the ground, may convey an idea of extent and magnificence. Whenever architecture is intended to be the principal object, it ought to occupy the greater part of the picture. The Romans were very particular in the arrangement of their buildings. Vitruvius says, that the “dining room and bath should look to the winter’s declining sun, because the afternoon light is there useful; bedrooms and libraries should look to the east, for in these the morning light is required.—It is also proper that the books in the library may not decay, for in those that look to the south and west they will be damaged by damps and worms, which humid windows generate and nourish. The spring and autumn should look to the east, for the windows then being turned from the sun, proceeding westward, render those things temperate at the time they are generally used. The summer should look to the north, because it remains always cool and, when used, is salubrious and pleasant. To the same aspect, also,

from the base. TURNER, the Royal Academician, often fixes his horizon after Gasper Poussin. (See his beautiful view of the Bridge of St. Cloud.)

should be disposed the embroidering and painting rooms."

Note 6, page 23.

See List of Honorary Associate Exhibitioners in 1842.

Note 7, page 29.

Many of the finest productions of the best masters are so badly placed, that, at the proper point for viewing them, you can see nothing but a glazed surface. Now, the rule in Perspective is always to take a standing position, and move backward or forward until you find the painter's centre,*—for in no other point of view can a perspective picture be seen to advantage,—and before any critical observation is made upon the picture, it is but fair to do this. Excellence must not be taken upon trust; nor should a great name at the corner of a picture deter us from rigid investigation, and candid expression of cool judgment.

Suppose a building to be one hundred feet in front, two hundred feet in the flank, and fifty feet in height, in the form of the heathen temples, twice the width of this picture is the best distance for the view; but no rule can be laid down for the point of distance,—this is one of the things in Perspective which must

* By CENTRE of a picture, is not meant the centre of the canvass upon which the picture is painted—as that seldom occurs, since it is frequently nearer to one side than the other, as the nature of the view may require, or as the taste of the artist may dictate. It is always somewhere in the horizontal line.

be left entirely to *choice*. I recommend, however, that in no instance the point of distance be less than twice the height of the building in the drawing. For instance, a monumental edifice, twenty feet square and two hundred feet high, having a balcony at the top, would appear very distorted if the point of distance were fixed at forty feet, although perfectly true according to the laws of perspective. St. Paul's, Covent Garden, the Town Hall of Birmingham, and many other grand edifices in various parts, cannot be viewed as they ought, for want of sufficient space around.

A small portion of sky gives height to a building, and a great height will reduce it. Large trees introduced in the foreground, lessen the building, and make it subordinate to the landscape. Figures, also, however they may interest, lessen the consequence of a building, and ought not to be represented in architectural elevation. The outline against the sky should be pleasing, and too much attention cannot be paid to the decoration of chimneys. Parapet roofs are not good looking. A pier should never be placed over a window, nor a chimney over a window, for it looks like a window through a chimney. Blank windows to a house look very bad, for they exhibit poverty of design: if they must be introduced, corresponding sashes should be placed, and the wall behind the glass painted black. Pilastres should never be introduced without an entablature on the top, or some office for them to perform more than mere ornament. A pediment attached to the wall of a house, with half columns, particularly the Ionic, is very unadvisable, as part of the volute is

concealed. Gothic sashes, having circular heads, are an incongruous mixture. Urns and vases, being intended for garden plants, should be used as ornaments of the base; but on the top of a building they are sadly misplaced. Balls on the top of a house, or on lofty entrance pieces, have a terrific appearance.—Ox-skulls, in the Doric order, are disgusting,—having been expressly intended for temples of sacrifice:—they may be appropriate for a gin palace, as the Kemble Tavern, in Bow-street, London. Festoons of flowers high up, are unintelligible,—low down, they collect the dust. Grecian and Gothic should never be mixed, nor Roman and Gothic. Egyptian and Grecian may be united. For plain buildings, use the Tuscan; for churches, the Doric or Gothic; for theatres, the Ionic; and for a palace, the Corinthian. The Composite is used for commemorative arches, pillars, &c.* Cottages should be irregular to be picturesque. No objects should be admitted which are not connected with the principal design of composition. Whenever an architectural design is made for an edifice, the light should be thrown on the building in the same direction as the sun would shine on the spot, otherwise a false effect will be given to the whole.

If it be required to take a drawing of a brick house, and to know its true admeasurement, count the num-

* The Doric Order of the Dorians, says Vitruvius, has a *robust* and *manly* appearance. The Ionic, from its elegant and *matron-like* appearance, is called the *female* Order; and the Corinthian, being more delicate than the Ionic, resembles the graceful figure of a *virgin*.

ber contained in the height of the windows, doors, &c., allowing four bricks to a foot; also count their number lengthwise, allowing nine inches for the length of each, and four for the breadth. The height of any other building can be ascertained, by making a mark on the wall, five feet from the ground,—then stand at any convenient distance, and place an upright rod in the ground; hold it steady with one hand,—shut one eye,—and mark on the rod, the apparent bottom of the building, the height of the chalk, and the top of the building. Divide the distance between the mark which corresponds with the chalk and that which answers to the bottom of the house, into five equal parts, and you will have a proportional scale of five feet, by which the height can be ascertained.

Note 8, page 32.

Arches, also, when situated in a vertical plane parallel to the plane of delineation, must be drawn strictly geometrical in the picture, according to their decreased dimensions, and in proportion to their distance from the picture; but when they are drawn as situated in planes oblique to the plane of delineation, they will then be ellipses, and vary in proportion to their distances from each other.

If a rainbow is represented in a picture, it is always seen opposite the sun, and to us is apparently elliptical, because the centre of the rainbow is opposite the centre of the sun.

When wheels are drawn in Perspective, the upper and lower vertical parts of the rim will always appear

wider than their sides. This is not sufficiently attended to by many artists, who frequently make them of equal breadth in every part.

Some writers assert that the Egyptians were "totally ignorant of the use of the arch," although "from Egypt all contemporary nations sought the arts and studied the sciences." Others, that the Greeks, and some say that the Romans, were the first to introduce the arch in architecture.

Temples are the only ruins left of Egyptian architecture, and if they were without roofs, the interior colonnades had no pediments; but the door-ways, we are told, were ornamented with a "*winged globe*," (the symbol by which they represented the universe,) meant to typify the Deity, whose invisible and divine image they, as well as the Israelites, dared not venture to characterize in any *human form*. Amongst their hieroglyphics, the *circle* and the *semi-circle* were common enough; and although the "*vaulted gallery*" under one of the pyramids, as described by Belzoni, formed a sort of "*triangular shaped*" passage (in perfect keeping with the pyramid), surely this is no *proof* that the Egyptians were "*totally ignorant* of the construction of the arch." Everything which is ancient in art demands our attention, if not our imitation; for Time, which has destroyed more noble, may have left us less beautiful models.

The round towers of Persia, corresponding in durable material with those of Ireland—said to be coeval with the Pyramids of Egypt, having been erected as objects of worship—do contain *arched openings*,

with *key-stones*. Again, the architectural character of the pyramids is purely *angular*, and the towers alluded to are all of *circular* shape; illustrated, in a natural and masterly manner, by my late lamented friend, Henry O'Brien, whose Essay on the Round Towers has established the originality and soundness of his ingenious views upon this interesting subject.

It would be foreign to the purpose of this work to enter into discussion about the skill of the Egyptians. Dr. Taylor says, "It deserves to be remarked, that the roofs of their immense corn granaries were arched."

Of the edifices erected among the settled people of Egypt, or their *style*, we know little or nothing,—any more than we can assign a *date* for the *first* use in architecture of that most beautiful and *royal* sign of God's mercy "set in the clouds." We can only amuse, by conjecture upon the civil and domestic architecture of the Egyptians. The numbers employed in making and burning of bricks, in Egypt and Babylon, indicate that building to a very great extent was going on. TEN CENTURIES appear to have elapsed, and we find no notice of any particular edifice, in any part of the world, whence the *style* can be inferred. Two buildings remain described in considerable detail, which had great fame in their own, and in all following ages: the Temple at Jerusalem and the Palace of Lebanon. Solomon had married the King of Egypt's daughter, and thus the arts, and sciences, and tastes of Egypt, in all their perfection,—

"And dazzling light, and *darkness visible*,
And architectural pomp,"

would be open to him; and, having consulted with ONE, who

“ Could find out *every* device,”

employed upwards of two hundred thousand workmen for “twenty years,” in the construction of the “house of the Lord, and his own house.” We find familiar mention of “arches” in the account of the Temple given by Ezekiel; who, if he did not witness the destruction of Jerusalem, was certainly carried captive into Babylon. This serves to show that the use of the arch in architecture was well understood, and used in building the Temple, by Solomon. Ezekiel imparted great comfort to the Israelites by his description of the former Temple, and by his prophecy respecting the latter

Before the foundation of the second Temple was laid, A GREAT DISCOVERY WAS MADE, which gave unmixed joy to Zerubbabel and Jeshua, by the reparation of a loss which had been seriously deplored for nearly five hundred years.

It is impossible here to explain what that loss was which had been so grievously felt, or what the discovery was which now filled all concerned with gratitude to the Almighty. The seed, “sown in tears,” was now “reaped in joy;” and the consequence was, an important addition to the order of FREEMASONS, now ingrafted upon it, in memory of the zeal and fidelity by which the discovery was made.

Mr. Wilkinson, in his “Topography of Thebes,” has substantiated the more than probability, that the arch was well known to the earlier Hebrew Judges, one

thousand five hundred and forty years before the Christian era. This account requires "neither argument to support it, nor will it allow prejudice to refute it." I therefore refer my readers to the Annotations on the Prophet Ezekiel, in Knight's Pictorial Bible.

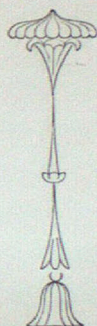
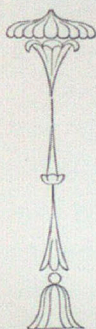
"There is given
Unto the things of earth, which Time hath bent,
A spirit's feelings ; and where he hath leant
His hand, but broke his scythe, there is a power
And magic in the ruin'd battlement,
For which the palace of the present hour
Must yield its pomp, and wait till ages are its dower."

Note 9, page 36.

A theatre, eighty feet long from the front of the boxes to the back of the stage, should have forty feet pit, so as to make the stage appear one hundred feet long. This may be shown by the following rules :— Draw a level line one hundred and forty feet long (by scale) ; then mark off at forty feet for the length of the pit, a perpendicular mark at forty feet from the front of the stage, which is the real length of it ; then suppose a person in the front box, about four feet above the level line first made, and draw a ray from the eye down to the end of the one hundred and forty line, and where it crosses the perpendicular which you marked to represent the real extent of the house, is the point to which the back of the stage must be raised, and it will correspond to the proper horizontal line, and produce the desired effect. The inclination generally adopted for theatrical stages is from one to two inches in three feet.



Shadows.





A Few Observations on Shadows.

SHADOWS are dark and defined gloomy parts seen on objects, occasioned by projections obstructing the rays of light.

SHADE is a dark and undefined shadow, such as we usually see under the eaves of roofs, cornices, balconies, window-sills, in the shady side of a brook,—and is occasioned by the deprivation of the light reflected from the sky, &c. It is, also, that gloominess observed in groves, or in a room under the tables and chairs, when daylight streams in at the window or other apertures.

REFLECTION.—The principal reflecting substances are, polished metals and mirrors. The first law of reflected light is the following. The angle of reflection is always equal to the angle of incidence. If a person stand a little on one side of a looking glass, he sees not himself, nor the furniture on his side of the room, but that on the opposite. If he go to the other side of the glass, he loses the furniture which he had before seen, and perceives that only which is on the other side of the glass. Should a ray of light fall perpendicularly on a reflecting horizontal

surface, it could form no angle with it; therefore, it must be thrown back again in the same direction.

That light is reflected in various directions will be evident, when we consider that a *perfect* plane has not yet been produced. If a surface be polished to the greatest exactness, the microscope will show that it is still uneven, and composed of various inclined planes, which must necessarily disperse the rays of light.

Never admit two equal lights in a picture.

The reflecting power of substances is in proportion to the evenness of their surfaces and the lightness of their colour. The darker and more irregular objects are, the less power will they have to reflect the light, the principal part of it being absorbed and lost; but white substances will reflect greater part of the light which falls upon them. The only sure method, therefore, of succeeding in giving a proper effect to the shadowing of the interior of buildings, is a diligent study of nature.

Some colours naturally reflect more light than others; consequently, an object will be more illuminated when exposed to one colour than to another, although at equal distances. To prove this, take a sheet of white paper, and hold it a little below a window, and parallel to a wall,—a very bright reflex light will be seen on the wall; hold the same paper inclined, and the reflection will be less; then substitute a piece of dark coloured paper, and scarcely any reflection will be perceived.

All colours appear differently in the shade to what they do in the light, or when the sun shines on them;

but, although every colour assumes a different hue in the shade, yet the original colour is always distinguishable, unless at a great distance. All reflected rays are tinged with the colour of the objects from which they are thrown back ; and if, after reflection, they fall on any other object, the colour of that object will be compounded of the reflected rays and its own native colour. If light reflected from a yellow object fall on another which is blue, it will give it a greenish tint ; red on blue will be purple, &c. So in a historical subject, the drapery of the figures will all be changed from their original colours, by reflections from each other. The reflected light of all objects seen at a distance, will not be so vivid as that from near objects ; because, light always proceeding in straight lines, its intensity must necessarily diminish, in proportion to the square of the distance. The colours of distant objects will also become tinged with a faint azure, or with the haziness of the body of air through which the rays must pass. All objects in shade will become gradually fainter, both in colour and substance, as they recede from the eye, until the shadows and colours will not be distinguished from each other. Therefore, the greatest distance in an open scene, with a clear sky, will always be the palest.

Light will be much more variously reflected in a room than on the external part of the building ; for every aperture gives an inlet to a different stream of light, probably of very different degrees of light and shade, and will likewise be affected by the colour of the various objects from which the light is reflected.

A house in town will have more reflex lights on it than one in the country, it being more closely surrounded by other objects, from which the rays will be reflected according to the inclination of the reflecting surfaces, such as horizontal pavements, vertical walls, and inclined roofs. If houses are situated in a close street, their bases will be nearly deprived of the light from the sky and the reflection from the ground: they will, therefore, be necessarily darker at the bottom than those which have no other houses in their vicinity. When a building is detached, it will be the reverse: the summit, having little reflective light, will be the darkest—or, rather, the faintest—the colours being tinged with the grey hue of the surrounding atmosphere; while the base, receiving a strong reflection from the sunny grass or gravel below, will be the brightest part of the building. An artist, therefore, who would succeed in Aërial Perspective, must carefully observe the effect which different distances and reflected colours will have on each original colour. He must know how its hue or strength will be heightened or diminished, that he may be able to give to each original object its mingled or acquired colour, and its proper tone and gradation, according to its determined place. The greatest distance in an enclosed scene will always be the darkest.*

* Rembrandt's pictures, all of which inspire sublime emotions and convey an air of grandeur, have the greatest effect of light and shadow of the Old Masters. He has generally more shadow than light, and that shadow dark and impressive—producing the most surprising effect.

As all objects in a picture take their proportion from the magnitude of those which are placed in the foreground, so, in Aërial Perspective, the strength of shadow and the brightness of colours belonging to the objects which are close to the line of projection, must serve as a measure to graduate the lights and shadows of the other objects, according as they are more or less remote. It is not absolutely required that the measures of the objects on the ground-line of the picture should be equal to life; they may be larger or smaller, provided every other figure bears a true proportion to that which is first chosen as a standard.

Some of our first masters take the standard of the human figure at seven feet, without any appearance of disproportion.

In the brightness of the colours, any degree of intensity may be adopted for the greatest light in a picture, if the lesser degrees of light have a corresponding gradation. Any tint will represent light, when contrasted with a darker, or it will serve as a shade, when opposed to a lighter colour. It is of little consequence, therefore, in point of keeping, how light or how dark a picture is, if its *transparency* is preserved, and the several parts have their proportional degrees of light and shadow; but if any colour should be made too bright for the general hue and character of the picture, it will give a deadness to the other parts of the drawing—or, as the painters express it, the brightness of that colour will overpower or kill the rest. The nearest objects, or those in the foreground of an open scene, will generally have the darkest shades.

An object seen in a plane mirror, always appears as far behind the reflecting surface as it really is before it. This will be evident, if a person standing in front of a looking-glass will observe his own image, and that of the surrounding objects, as reflected from the glass. Everything retains its true relative position. If he advance towards the glass, his image advances to meet him; if he stretch out his hand till it touches the glass, the image likewise does the same, in a very amusing way; if he recede, the image proportionably recedes.

The reflection of an object seen in smooth water is always as far below the surface as the object itself is above it, making the same angle of inclination below the surface of the water as the object itself makes above it.

Shadows by day are governed by the altitude of the sun, diminishing by length; but shadows produced by lamp or candle always expand. These two comprehend the principles for all shadows.

Transparent bodies have the strength of their shadows in exact proportion to their degrees of transparency, and are liable to as much reflection as their opaque parts will contain.

Reflection and its effects may be imitated,—light cannot. It is an amusing delusion to endeavour to represent that LIGHT which causes the lights and shadows of the subject of study.



A House in Shadow.

If a house has a coping or top-stone on the wall, projecting over it, the stone will have a shade underneath and a defined shadow thrown from it on the wall below. The shade under the visible part of the stone will be the lightest, having a vivid reflection thrown upwards from the sunny wall below, and the projected shadow will always be the darkest. The shade and shadow under the soffit of a projecting roof will have the like degrees of intensity.

The crown moulding, or top moulding of a horizontal cornice, which is concave, will be darkest at the bottom of the cove, and softened upwards, on account of its receiving a bright reflection from the sunny wall below. If the whole cove is not immersed in shadow, the lower part of the shadow will show a defined edge.

If the crown moulding is concave above and convex below, it will exhibit two principal shadows, one on the concave part, the other on the convex. The upper shadow (which should, in general, include about one-third of the moulding)* will show a definite line at its bottom edge along the cove; occasioned by the fillet above it; and the upper part of the shadow will gradually diminish towards the edge of the upper fillet. The lower shadow will be darkest a little below the most prominent part of the moulding, gradually

* The sun's rays are here supposed to make an angle of forty-five degrees, with a vertical plane.

diminishing into the cove above and towards the fillet below. The fillet under the moulding will show an even, defined surface of shade, terminating at the moulding.

The reveal to a blank window will have two degrees of shadow,—the lighter round the reveal, and the darker thrown from it on the wall. A stone window-sill will have two degrees of shadow,—the lighter under the sill, and the darker shadow projected from it on the wall.

A projecting balcony will have two degrees of shade—namely, the lighter underneath, and the darker on the sides: but the shadow which is projected from the balcony on the wall, will be darker than either.

If a stone step is attached to a wall, it will produce two shades—namely, the lighter on the riser, or edge of the step, and the darker on the ground. This will likewise be the case in a flight of steps.

A circular-headed niche in a vertical wall, which has a shadow projected into it, will be definite at the edge in the niche, and softened towards the front and head.

If a dwarf wall, or any other object, throws a shadow on a flight of steps, the top of the steps will, at all times, be the lightest.

Stone steps, the ends of which are visible, will have three degrees of shade on them. The lightest will be on the top, being illuminated by the sky; the second will be on the front, or riser; and the third on the end: but, if the end of the step is near the side of the house, or a portion of ground strongly illuminated by the sun,

it will be lighter than the front, or riser: this, however, seldom happens.

A vertical column attached to a wall, will show an intense penumbra shade in the cavity between the column and the wall; there will, also, be a shade on the column near it, but not so dark as this shade, and which will gradually soften towards the other visible edge of the column, where it will be lightest. If the column is detached from the wall, as a portico, it will have a gleam of light on that edge which is seen nearest the wall; and, at a little distance, will be a line of penumbra shade down the column, graduating into this light, and proceeding towards the other edge of the column, where it will be lightest. If the columns are fluted, the farthest visible side of the flutes will be darkest, and the shadow will graduate into the concave part of the flutes.

A circular niche, in the shady side of a house, will always have its darkest part at the top, the next degree will be at the side farthest from the eye, and both softened into the recess. A circular bow, in the shady side of a house, will have its darkest part close to the wall nearest the eye, and softened towards its extremity, where it will be lightest. The whole of the bow will throw a faint penumbra shade on the plain wall, but not so dark as that part of the bow near the wall.

All shadows which are thrown from one object on another, will be darker than the object itself, a black object alone excepted; for this reason,—those parts of objects not illumined receive the reflection of the

brightness around them, while the shadow given can receive no reflection but from the object in shade.

If a near object throw a shadow on a column, that shadow will always be a definite one, if the object is not so far distant as to render the edge a penumbra.

The shadows of all objects projected on the ground will continually become less definite at their extremities as the objects increase in height, and more definite as the objects decrease. If a lofty house projects a shadow on the ground, the shadow will be definite near the angle of a building, but towards the extremity it will be penumbra, and indistinct.

To prove this, let a person stand on the extremity of a shadow, and immediately a positive edge of shadow will be seen projecting from the person on the ground, the contrast between which and the undefined edges of the shadow of the building will sufficiently illustrate my position.

The shadows from all objects projected on the ground should be bent if the ground undulates. The omission of this is a frequent error among architects : they project their shadows on the ground as if it were a carpeted floor.

If a gateway to a park entrance has an arch over it and the sun is shining on the building, the lightest part will be in the arch above ; if the sun is not shining, it will be the darkest. The shades will also be tinged with the colour of the ground underneath : if the gateway be surrounded with gravel, it will have a yellowish hue,—if with grass, the shade will be tinged with green.

The top windows of a house in a street will generally be lighter than those at the bottom, having the greatest reflex from the sky, and the least opposition of darkness from the room within;—also, the distant one will be lighter than those which are nearer, for the same reason, and on account of the Aërial Perspective.

All parallel perpendicular surfaces will have the like degrees of shade, if equally distant from the eye; if the distances are unequal, they will become fainter as they recede. All horizontal surfaces will be the same, if they are not so near the ground as to receive a reflection from it, or so high up as to be enveloped in the haze of the atmosphere.

If an object on a floor within a room be exposed to two lights, at unequal distances, there will be two shadows cast from the object on that floor, of different degrees of intensity. The shadow occasioned by the nearer light will be the darker, while the other will be the lighter.

All shades within a room will be penumbra; but if the sun shines in at a window, there will be a defined edge to the shadow, where it is terminated by the interposition of the light image of the window on the floor, or on the opposite wall. If a building has the sun shining on its front, with the end in shade, and throwing a shadow on the ground at an angle of nearly forty-five degrees, the lighter part of the shady side will be near the bottom of the angle, towards the front, and the darker at the distant angle; for the former receives a strong reflection from the sunny ground, and the latter only from the sky.

Shadows representing the different divisions of machinery, should be carefully and accurately studied, so as to give an explicit description of the various parts. All mechanical drawings should be perfectly free of *back-ground shadows*.

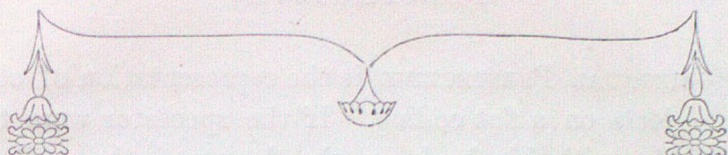
Look to NATURE with the eye of ART, for nothing can be produced without the equal union of mental and mechanical means.





The Different Kinds of
Perspective.





The Different Kinds of Perspective.

LINEAL PERSPECTIVE is the representation of objects in outline, without shadow.

ANGULAR, or OBLIQUE PERSPECTIVE, is when the horizontal lines of the front and side of a building both converge to vanishing points.

PARALLEL PERSPECTIVE is when the front of a building or object represents a kind of geometrical elevation, having all its horizontal lines parallel, the end or side converging to a vanishing point in the horizon. Canaletti's specimens are amongst the finest.

BIRD'S-EYE, or ELEVATED PERSPECTIVE, is used in drawing colleges, asylums, spacious courts, fields, or gardens—looking down, as from a church steeple, a balloon, or a mountain. The distance to which a person can see, at any given height of the eye, is generally calculated by Sir Isaac Newton's Tables. "Multiply the square root of the height of the eye in feet by 1.2247, and the product is the distance in miles to which we can see from that height."

HORIZONTAL PERSPECTIVE is the representation of objects on a flat ceiling. If the spectator were to lie with his back on the floor, and the ceiling and floor were conceived to be turned perpendicularly, with the wall opposite his feet, answering to the ground plane, it would then be seen to be according to Parallel Perspective. The ceiling of Whitehall is the finest specimen in this country, painted by Sir Peter Paul Rubens.

PANORAMIC PERSPECTIVE is the representation of objects upon the inside of the wall of a circular building, the spectator moving round the same. The Colosseum in the Regent's Park is a fine specimen, by Parris.

SPHERIC PERSPECTIVE is the representation of objects on the inside surface of a dome. Sir James Thornhill has mastered this kind of Perspective in the dome of St. Paul's.

THEATRICAL PERSPECTIVE is the application of Perspective to the detached scenery of a theatre, which, at all our principal houses, is beautifully painted.

MILITARY PERSPECTIVE is used in drawing fortifications or ramparts; it is partly geometrical and partly stereographical.

SCIAGRAPHIC PERSPECTIVE is the art of projecting shadows from a luminous body,—as the sun, a lamp, a candle, &c.

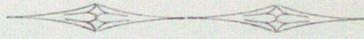
AËRIAL PERSPECTIVE is the gradation of light and shade on various objects, as they recede from

the eye ;—for instance, a building a mile distant would be fainter in light shade than one a quarter of a mile distant ; and so in proportion, until the parts are become imperceptible.

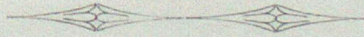
ISOMETRICAL PERSPECTIVE is preferable to the common Perspective, when adapted to the exhibition of machinery. The information it affords is much more definite and precise than that given by the usual method. Engineers and mechanics adopt it, being better fitted to direct a workman.—This new kind of Perspective resembles Bird's-eye views, except that the plane of the representation is not perpendicular to any horizon, but to a line, drawn from the eye to some principal part of the object. For example: in taking the drawing of a cube, the eye might be placed in a distant point on the line which is formed by producing the diagonal of the cube, so as to exhibit three sides of equal lines adapted to a scale, in *any* position the cube will appear correct ; but if viewed in Common Perspective, the eye of the person who looks at it must be exactly opposite the point of sight, which to workmen unaccustomed to look at such drawings, and unacquainted with the rules of Perspective, frequently occasions the most puzzling perplexity. Isometrical drawing, therefore, is more easy and more accurate than any other for the purposes of machinery. The angles too, of this kind of Perspective, although drawn at sixty degrees (the

easiest of any to draw), cannot for a moment be doubted to exhibit right angles. The representation of wheels also, and the manner in which they act on one another, is very simple and intelligible.





Terms used in
Perspective.





Terms used in Perspective.

PROJECTION is the delineation of objects transcribed on a plane surface according to certain principles.—When on a globe, representing celestial or terrestrial bodies, it is called Spheric Projection.

ORTHOGRAPHY signifies the upright delineation of an object, commonly called an elevation.

SCENOGRAPHY is a Perspective projection made on any surface, either curved or plane, by a cone of rays projected to the place of delineation. It is, however, (as observed elsewhere,) impossible to lay down rules for the distance, since too near a view of the object causes distortion, and a very distant one often renders the Perspective too tame; but the projection is Scenographic, let the eye be far or near,—and whether the delineation be a solid or a surface it is the same. This is one of the most pleasing of all projections, as it conveys a lively idea of objects in art or nature.

SEAT is the space that an object would occupy on the ground plane.

PLAN is the horizontal section of a building divided into compartments.

LINE OF PROJECTION is the line on which the plane of delineation is situated, or where the distances of the vertical lines are taken from and transferred to the paper on which they are intended to be drawn,—which is done by rules, on paper lying horizontally, producing the same figure as would be obtained if the paper were placed perpendicularly on the line of projection, and intersected by the optic rays.

ORIGINAL OBJECT is any object, or the subject we are about to sketch.

INTERSECTING LINE is a line drawn from the seat of an original object to the line of projection, and generally parallel to one of the sides of the seat; but it may be drawn in any direction not tending to the eye of the spectator—as, in that case, it would be called a visual ray.

DIVIDING POINT is a proportional point, obtained in the horizontal line, for dividing and proportioning the figures on a plane, and is calculated to facilitate the practice of Perspective where parts are very tedious, as dentals, balustrades, battlements, &c.

PRINCIPAL ANGLE is the angle contiguous to the line of projection.

HORIZONTAL LINE is a line drawn parallel to the base line, the height of the spectator's eye, and is supposed to be obtained by a horizontal plane passing before and from the observer's eye to the plane of the picture, or the plane of delineation.

VISUAL RAYS, in optics, signify imaginary rays of light, by which vision is supposed to be conveyed from

the object to the eye of the spectator ; in Perspective, they are straight lines, imagined to be drawn from the eye to the object in view.

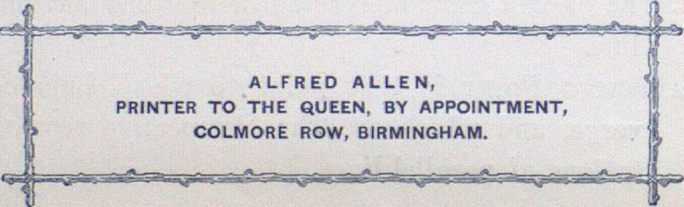
DISTANCE OF THE PICTURE is the distance of the centre line from the plane of delineation to the station-point.

POINT OF SIGHT, or STATION-POINT, is the station or fixed place of the eye of the observer viewing the object to be drawn, and where the spectator ought always to be placed to look at a picture in Perspective.

CENTRE OF THE PICTURE is somewhere in the horizontal line.

VANISHING POINT is that point to which lines converge, and which are the Perspective representations of parallel lines.





ALFRED ALLEN,
PRINTER TO THE QUEEN, BY APPOINTMENT,
COLMORE ROW, BIRMINGHAM.

CPM

741.46

13

